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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,431	11/08/2001	Yoshinori Naruoka	Q67192	5225

7590 09/16/2004

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EXAMINER
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WEINER, LAURA S

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/986,431		NARUOKA ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
		Laura S Weiner		1745

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 25 August 2004.

2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☒ Claim(s) 5 and 6 is/are allowed.

6) ☒ Claim(s) 1-4, 7-14 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All    b) ☐ Some \*    c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

<p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____</p>	<p>4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p>
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**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed 8-25-04 have been fully considered but they are not persuasive.

***Claim Rejections - 35 USC § 102***

***Claim Rejections - 35 USC § 103***

2. Claims 1, 3, 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakajima et al. (JP 2000-133262, abstract).

Nakajima et al. teaches a secondary battery comprising a positive active material,  $\text{Li}_{1-a}\text{Ni}_b\text{Co}_c\text{Mn}_{1-a-b-c}\text{O}_2$  wherein the ratio R of the total X-ray diffraction peak intensity of the (012) and (006) planes for a CuK $\alpha$  radiation source to the X-ray diffraction peak intensity of the (101) plane is in the range of from 0.51:1 to 0.70:1. In addition, Nakajima et al. teaches in Table 1, comparative Example 6, that it is known to have a positive active material of  $\text{Li}_{1-a}\text{Ni}_{0.600}\text{Co}_{0.200}\text{Mn}_{0.200}\text{O}_2$  ( $\text{Li}_{1-a}\text{Ni}_{1-b-c}\text{Co}_b\text{Mn}_c\text{O}_2$ ) which gives an R=0.388 which meet the limitation of not greater than 0.50.

Since Nakajima et al. teaches the same positive electrode material having the ratio of the total X-ray diffraction peak intensity of the (012) and (006) planes for a CuK $\alpha$  radiation source to the X-ray diffraction peak intensity of the (101) plane of 0.388 then inherently the same positive active material for a lithium secondary battery must also be obtained.

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In addition, the presently claimed property of the ratio of the total X-ray diffraction peak intensity of the (012) and (006) planes for a CuK $\alpha$  radiation source to the X-ray diffraction peak intensity of the (101) plane of 0.388 when Ni= 0.600, Co=0.200 and Mn=0.200 is taught. Also, Nakajimi et al. teaches the range of R=0.510-0.700 would have obviously have been present once the Nakajima et al. product is provided because 0.510 is within the standard deviation of measuring error and is rounded to 0.500 or 0.50 or 0.5. *In re Best*, 195 USPQ 433 (CCPA 1977).

When the claimed range and the prior art range are very similarly (i.e., not greater than 0.50 and 0.51) the range of the prior art establishes *prima facie* obviousness because one of ordinary skill in the art would have expected the similar ranges to have the same properties. See *in re Peterson*, 65 USPQ2d 1379, 1382, citing *titanium Metals Corp. V. Banner*, 227 USPQ 773, 779.

3. Claims 2, 4 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (JP 2000-133262, abstract) in view of Inoue et al. (5,707,756).

Nakajima et al. teaches in Table 1, comparative Example 6, that it is known to have a positive active material of  $\text{Li}_a\text{Ni}_{0.600}\text{Co}_{0.200}\text{Mn}_{0.200}\text{O}_2$  ( $\text{Li}_a\text{Ni}_{1-b-c}\text{Co}_b\text{Mn}_c\text{O}_2$ ) which gives an R=0.388

Nakajima et al. teaches the claimed invention except does not specify that the positive active material has a mean particle diameter of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$ .

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a positive active material having a mean particle diameter of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$ , since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a positive active material having a mean particle diameter of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$ , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Inoue et al. teaches in column 30 that it is known to use lithium containing metal oxides in the nonaqueous secondary battery and in column 17, lines 31-40, that the average grain size of the positive electrode active material is not particularly limited but is preferably 0.1 to 50  $\mu\text{m}$  and that the specific surface area is not particularly limited but it is preferably in the range of 0.01-50  $\text{m}^2/\text{g}$  measured by the BET method.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a positive active material having a mean particle diameter of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$  because Inoue et al. teaches that the average grain size and specific surface area is not particularly limited and teaches the claimed ranges.

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***Claim Rejections - 35 USC § 112***

4. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for R to be not less than 0.422, does not reasonably provide enablement for an infinite top range. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. There is no support for having an infinite top range.

***Allowable Subject Matter***

5. Claims 5-6 are allowed.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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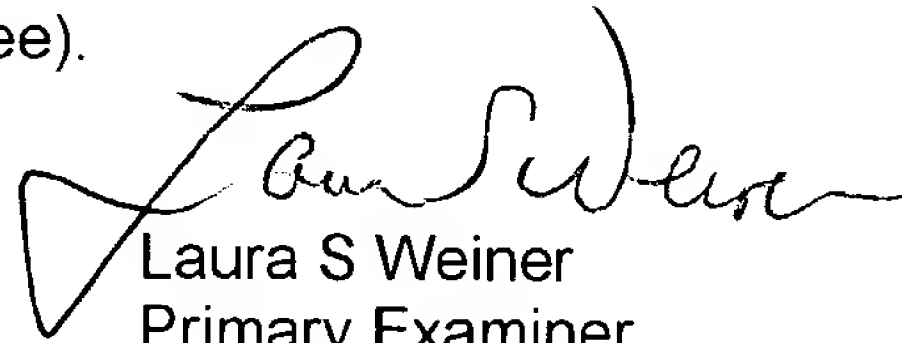
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Laura S Weiner  
Primary Examiner  
Art Unit 1745

September 13, 2004

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